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ABSTRACT

Previous research in laboratory settings has found that preschool girls show more interest in babies than do preschool boys. To validate these findings in natural settings, 71 children at 3 and 5 years of age were observed by their parents as the children interacted with babies in their daily lives. Each child was observed with three different non-sibling infants. Parents answered three multiple choice questions about the percentage of time that the child interacted with the baby, the degree of interest shown in the baby, and the amount of nurturance shown to the baby. In addition, the parents recorded child behaviors, such as kissing, talking to, playing with, helping, touching, or holding the baby. The parents also indicated the baby's age and gender, and described the setting and others present. Prior to observing their children with the babies, the parents completed questionnaires soliciting demographic information and information about their child's temperamental characteristics. The study found that girls spent more time with, showed more interest in, devoted more nurturance toward, and interacted more with babies than did boys, particularly among the 5-year-old children. Children without younger siblings interacted more with the babies than did children with siblings. (AC)

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Preschool Children's Interest in Babies: Observations in Naturally-Occurring Settings

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Abstract

Previous research in laboratory settings has found preschool girls to show more interest in babies than preschool boys. This study consisted of parental observations of 71 3- and 5-year-old children with babies whom they encountered in their daily lives. Each child was observed with three different non-sibling infants.

The parents answered three multiple-choice questions about the percentage of the time that the child interacted with the baby, the degree of interest shown in the baby, and the amount of nurturance shown to the baby. The parents also recorded behaviors that the child showed to the baby.

Prior to observing their children interacting with infants, parents completed questionnaires measuring demographic information and their children's temperamental characteristics.

Confirming the previous laboratory findings, the girls spent more time with, showed more interest in, devoted more nurturance toward, and interacted more with babies than did the boys, particularly among the 5-year-olds.

Preschool Children's Interest in Babies: Observations in Naturally-Occurring Settings

Over the past few years there have been several studies (Berman, 1987; Berman & Goodman, 1984; Berman, Monda & Myerscough, 1977; Berman, Smith & Goodman, 1983; Blakemore, 1981; 1991; Melson & Fogel, 1982; Reid, Tate & Berman, 1989; Reid, Trotter & Tate, 1991) demonstrating greater interest in and interaction with infants on the part of preschool girls as compared to preschool boys.

When the studies have included younger and older preschoolers (e.g., Berman, 1987) it has been reported that the gender difference is particularly pronounced among the older preschoolers. That is, 5-year-old girls have often shown much more interest in babies than 5-year-old boys, and the gender difference has been reported to be smaller or non-existent among 3-year-olds. Additionally, boys' interest in babies has been reported to undergo a decline over the years from 3 to 5, and girls' interest to increase (Berman, 1987).

The previous research has been set in either laboratory settings, or in day-care centers, in which a baby was specifically brought to the setting to study the child's interactions with the baby. No research on this topic has observed children in completely natural settings, as they happen to encounter babies in their lives.

The purpose of the present study was to observe children as they encounter infants in their everyday lives in order to extend the reported laboratory findings to a wider variety of settings, and to potentially more ecologically valid ones. Based on the previous research, two hypotheses were being tested:

1. Girls were expected to show more interest and higher levels of interaction with infants than were boys.
2. The gender difference was expected to be more pronounced among 5-year-olds. Additionally, 5-year-old boys were expected to show less interest in infants than 3-year-old boys, while the reverse pattern was expected for girls.

Method

Subjects: There were 71 preschool children in this study in two age groups: 3-year-olds (21M; 17F) and 5-year-olds (12M; 21F). The children were recruited from several day-care centers serving a wide segment of the community, and from children of students in introductory psychology classes at a regional commuter campus of a state university.

Procedure: The parents completed informed consent forms and two questionnaires about their children concerning demographic information, information about the child's typical interactions with babies, and the DOTS-R (Windle & Lerner, 1986), a measurement of temperament.

The parents were asked to record three different episodes when their child encountered a baby. These spontaneous encounters took place in public places (e.g., church, doctor's office, etc.) and in private homes. The parents were given the following instructions:

1. Record your child's interactions with three different babies on three separate occasions. The baby is not to be a brother or sister of your child, but may be a cousin, family friend or a complete stranger.
2. A period of interaction is defined as a time during which the child and a baby under 13 months of age are physically present together

and when the child could interact with the baby if he/she chose to do so. Other people may also be present.

3. The period of time when both the child and baby are together should be no shorter than 5 minutes and no longer than half an hour. If the child and baby are together for more than half an hour, record the first half hour only.
4. The observations should take place at least one week apart.
5. You have this semester to complete all observations.
6. The observations you record should be naturally occurring. Do not stage interactions between your child and an infant. Also, do not encourage or discourage your child's interactions with the baby in any manner different from your normal interactions.
7. Fill in the form describing the observation as soon as possible following the observation. Ideally it should be completed immediately after the observation. It should certainly be done the same day.

Accompanying the questionnaires and the instructions were three forms to be used to record observations. On these forms the parents answered three multiple-choice questions about the percentage of the time that the child interacted with the baby (Q1), the degree of interest shown in the baby (Q2), and the amount of nurturance shown to the baby (Q3). The parents also recorded behaviors that the child showed to the baby. These behaviors were: kiss, talk, play with, help, touch, and hold. Parents also indicated the baby's age and gender, described the setting and others present. If they desired, parents added comments about the observation on the back of the sheet. A sample of this sheet can be seen in Table 1.

Insert Table 1 about here.

Results

The first analyses were 2 (gender) X 2 (age) X 3 (observation -- repeated measure) ANOVAs on Q1, Q2, and Q3. Girls scored significantly higher than boys on each of the three questions, F (1, 67) = 8.57, $p < .005$, F (1, 67) = 8.07, $p < .01$, and, F (1, 67) = 8.64, $p < .005$, respectively. The effects of age, observation and any interactions among the variables did not reach conventional levels of statistical significance.

Since there was no effect of observation, the scores on Q1, Q2, and Q3 were summed across the three observations and analyzed with a 2 (age) X 2 (gender) ANOVA. The results again demonstrated that girls scored higher than boys on each of the three questions, F (1, 67) = 8.57, $p < .005$, F (1, 67) = 9.29, $p < .005$, and F (1, 67) = 8.64, $p < .005$, for Q1, Q2, and Q3, respectively. No other effects were statistically significant. These analyses are presented graphically in Figures 1 (Q1), 2 (Q2), and 3 (Q3).

Insert Figures 1, 2 & 3 about here.

Because it was hypothesized that the gender difference would be more pronounced among 5-year-olds, and that boys' interest would decline from 3 to 5 , while girls' would increase, a series of one-way ANOVAs were used to make comparisons between the two genders at each age, and between the two ages for each gender. These analyses found significant effects of gender among 5-year-olds on Q1, F (1, 31) = 8.43, $p < .01$; Q2, F (1, 31) = 12.44, $p < .005$; and

Q3, F (1, 31) = 8.41, $p < .01$. In all cases girls had higher scores than boys. No significant effects of gender were found among 3-year-olds. On Q2, which asks "How much interest did the child show in the baby?", 3-year-old boys did show significantly more interest in the babies than did 5-year-old boys, F (1, 31) = 4.80, $p < .05$.

Some of the children had younger siblings and some did not. A 2 (gender) X 2 (sibling status) ANOVA of Q1, Q2, and Q3 found main effects for both gender and sibling status, as well as a significant interaction between gender and sibling status on Q2. The findings indicate that girls interacted more with the babies than did boys, and in general, children without younger siblings showed more interest than those who had younger siblings. The interaction on Q2, indicated that the effect of having a younger sibling only held for boys on that question. The ANOVA results can be found in Table 2.

Insert Table 2 about here.

In addition to the scores on Q1, Q2 and Q3, the parents recorded behaviors shown by their children to the infants they encountered. These behaviors were: kiss, talk, play with, help, touch, and hold. Initially, each of these behaviors and the total of all 6 behaviors were analyzed with a 2 (age) X 2 (gender) X 3 (observation) repeated measures ANOVA. In no case did the observation (first, second or third) produce a significant main effect or interaction. Therefore, each behavior and the total of all six behaviors were summed across the three observations and analyzed with a 2 (age) X 2 (gender) ANOVA.

These ANOVAs found a significant main effect of gender for talking, F

(1, 67) = 8.75, $p < .005$, and for the total of all behaviors, F (1, 67) = 5.05, $p < .05$. These two findings are presented graphically in Figures 4 and 5. Two other behaviors, touching and holding, showed borderline ($.05 < p < .10$) effects of gender. In all cases, girls showed more interaction with the baby than did boys. No other effects or interactions reached conventional levels of statistical significance, although there was one borderline effect involving age (younger children tending to kiss the babies more), and two borderline interactions between age and gender (with the gender difference being more pronounced among 5-year-olds for talking, and 3-year-olds for holding).

Insert Figures 4 & 5 about here.

Again, because of the hypothesis that gender differences would be more likely among 5-year-olds, a series of one-way ANOVAs were again used to make the appropriate comparisons. Only two of these comparisons were statistically significant. The 5-year-old girls talked (M = 2.7; SD = .6) significantly more than the 5-year-old boys did (M = 1.8; SD = 1.1), F (1, 31) = 10.72, $p < .005$. This difference was not significant among the 3-year-olds. On the other hand, the 3-year-old girls (M = 1.2; SD = 1.1) held the baby significantly more than did the 3-year-old boys (M = .4; SD = .7). This comparison did not produce a significant difference among the 5-year-old boys and girls.

Each of the behavior scores and the total were also analyzed with a 2 (gender) X 2 (sibling status) ANOVA. These ANOVAs produced several significant main effects and interactions which can be seen in Table 3.

Generally, these findings indicated more interaction from girls than boys, and more from children without younger siblings of their own. The interactions found that the effect of more interaction on the part of children without younger siblings was more likely to be found among boys. In addition to the significant findings reported in Table 3, there were several borderline effects that showed patterns similar to the significant findings.

Insert Table 3 about here.

The parents also completed the DOTS-R, a measure of their children's temperamental characteristics. No effects of any of the temperament sub-scales were found on interaction with the infants whom the children encountered.

Discussion

Two hypotheses were being examined in this study. We had expected that girls would show more interest in and higher levels of interaction with infants than would boys, and that the gender difference would be more pronounced among 5-year-olds. The first hypothesis was clearly confirmed, while the second was less strongly supported.

Interest in and interaction with three non-sibling babies was measured by parents. The parents answered three multiple choice questions about their child's interest in each of the three babies. The questions asked about the percentage of the time that the child interacted with the baby (Q1), the degree of interest shown in the baby (Q2), and the amount of nurturance shown to the baby (Q3). Girls had higher scores on all three of these questions than did boys. Parents also recorded whether their child showed any of six

behaviors to the baby. Again, it was found that girls talked to the baby more than boys did, and that their total score (all behaviors summed across the three infants with whom they interacted) was higher than boys'.

The hypothesis that the gender difference would be more likely among 5-year-olds was confirmed for Q1, Q2, and Q3 and for "talking". It was not supported for any other behavior, or for the total of all behaviors. Additionally, the gender difference was more pronounced among 3-year-olds for "holding".

The study also found more interest in and interaction with these unfamiliar infants from both boys and girls with no younger siblings of their own. Perhaps one could label this a "novelty" effect.

This study reinforces several years of laboratory research finding that, by the late preschool period, girls show more interest in infants than boys. It is exciting to see the laboratory findings confirmed and extended with observations in these naturally-occurring events.

The behaviors involved in interacting with babies -- indeed merely showing interest in them -- are clearly an integral part of the female gender-role. We now plan to examine the relationship between interest in babies and other aspects of gender-role development.

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Table 1

Observation Recording Sheet Used by Parents

Code Number:_____ Date:_____

Describe the period of interaction:

How long was it?_____.

Where was it?_____.

How old was the baby? (estimate if unsure)_____

Was the baby a boy or a girl?_____

Who was present other than your child, the baby and yourself?

_____

1. During the period of time that your child could have interacted with the baby, what percentage of the time did he/she do so?

   a. 0%
   b. 1 - 25%
   c. 26 - 50%
   d. 51 - 75%
   e. 76 - 100%

2. How much interest did your child show in the baby?

   a. None
   b. Very little
   c. Some
   d. Much
   e. Very much

3. How nurturant (loving/caring) was your child to the baby?

   a. Not at all
   b. Very little
   c. Some
   d. Much
   e. Very much

4. Did your child do any of the following things with or to the baby? Circle all that apply.

   Kiss the baby Talk to the baby Play with the baby

   Help the baby Touch the baby Hold the baby

5. On the other side of this sheet add any other information about the observation or about your child's interaction with the baby that you feel would be helpful. Thank you.

Table 2

Significant Results from Gender X Sibling Status (Presence or Absence of a Younger Sibling) ANOVAs of Q1, Q2, and Q3

Factor	F	p	Ms (SDs)
Q1 - Gender	12.46	.001	Boys = 8.3 (2.9)
			Girls = 10.2 (2.7)
Q2 - Gender	13.61	.001	Boys = 10.0 (2.8)
			Girls = 11.6 (2.4)
Q3 - Gender	12.98	.001	Boys = 9.5 (3.2)
			Girls = 11.4 (2.7)
Q1 - Younger Sibling	5.07	.05	With = 8.8 (2.9)
			Without = 9.9 (2.9)
Q2 - Younger Sibling	3.78	.06	With = 10.5 (3.1)
			Without = 11.3 (2.2)
Q3 - Younger Sibling	7.70	.01	With = 9.8 (3.3)
			Without = 11.3 (2.7)
Q2 - Interaction (Gender X Younger Sibling)	4.15	.05	Boys, with = 8.5 (3.1)
			Boys, without = 10.9 (2.3)
			Girls, with = 11.9 (2.4)
			Girls, without = 11.8 (2.1)

Table 3

Significant Results from Gender X Sibling Status (Presence or Absence of a Younger Sibling) ANOVAs of Individual Behaviors and Their Total

Factor	F	p	Ms (SDs)
Talk - Gender	16.20	.001	Boys = 2.1 (1.0)
			Girls = 2.6 (.7)
Touch - Gender	5.08	.05	Boys = 1.9 (1.3)
			Girls = 2.3 (1.0)
Total - Gender	8.35	.005	Boys = 8.1 (4.1)
			Girls = 10.2 (3.7)
Talk - Younger Sibling	12.94	.001	With = 2.1 (1.1)
			Without = 2.6 (.6)
Help - Younger Sibling	4.24	.05	With = 1.1 (.9)
			Without = 1.5 (1.1)
Touch - Younger Sibling	4.31	.05	With = 1.9 (1.3)
			Without = 2.3 (1.0)
Total - Younger Sibling	6.31	.05	With = 8.2 (4.5)
			Without = 10.2 (3.5)
Talk - Interaction	4.42	.05	Boys, with = 1.4 (1.1)
(Gender X Younger Sibling)			Boys, without = 2.5 (.7)
			Girls, with = 2.6 (.9)
			Girls, without = 2.8 (.4)
Touch - Interaction	4.31	.05	Boys, with = 1.2 (1.5)
(Gender X Younger Sibling)			Boys, without = 2.3 (1.1)
			Girls, with = 2.3 (1.0)
			Girls, without = 2.3 (1.0)

Figure 1

Percent of Time Interacting with Infant

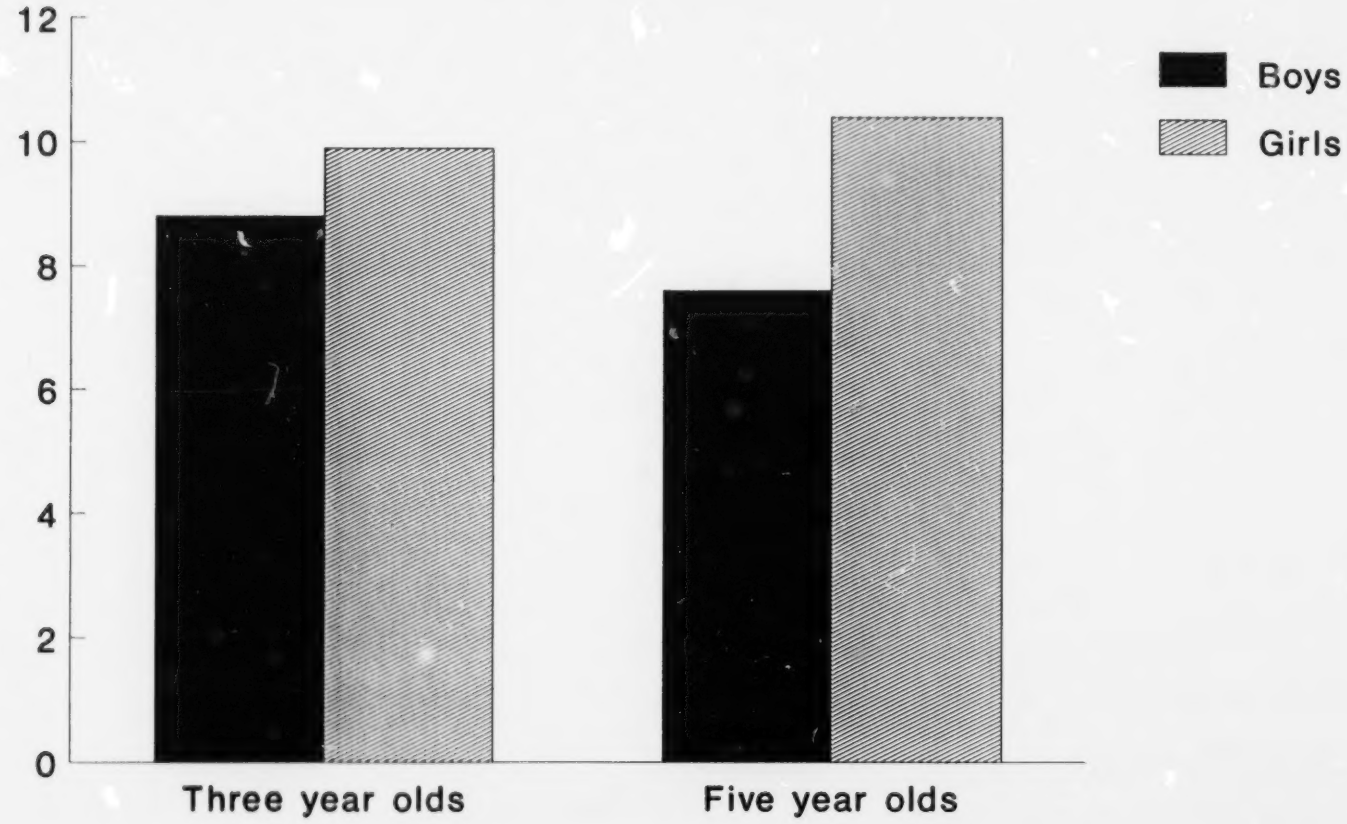

Figure 2
Interest in Baby

Figure 3
Nurturance To Baby

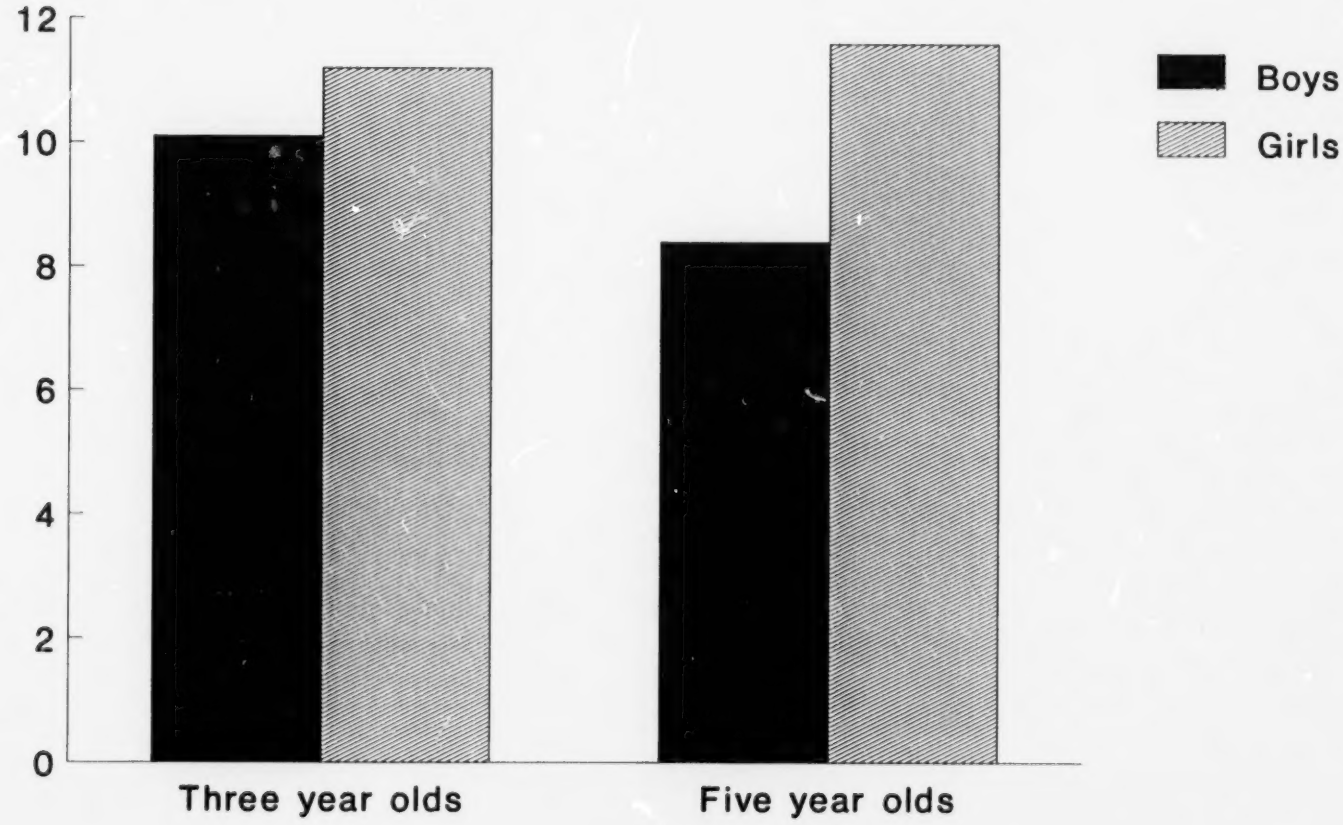

Figure 4

Total Behaviors Shown to Three Babies

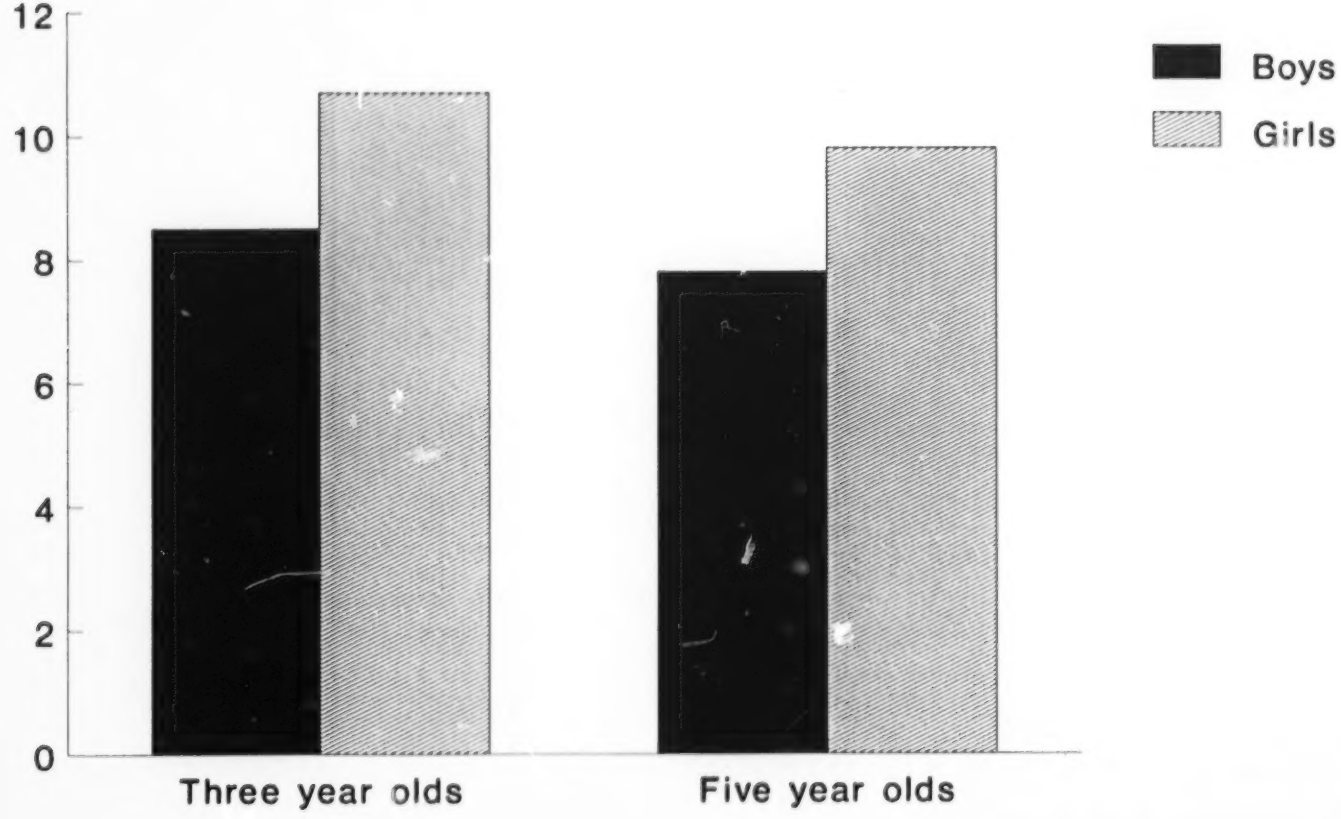

Figure 5
Talking to the Three Babies